

Notice of Allowability

Application No.

10/669,861

Applicant(s)

LEE ET AL.

Examiner

Art Unit

Jennifer Dunston, Ph.D.

1636

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to communication(s) filed 7/22/2008.
2. ☒ The allowed claim(s) is/are 2,3,5,6,14,23,24,30,31 and 36-41.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>20081205</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date ____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other ____. |

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Ramon Tabtiang on 12/5/2008.

The application has been amended as follows:

The title has been changed to the following:

Zinc finger transcription factor differentiation proteins

In the specification:

At the first paragraph of page 1, the phrase "now abandoned," has been inserted between "10/314,669," and "filed December 9, 2002".

In the claims:

5. (currently amended) An isolated transcription factor that comprises a first, second and third zinc finger domain in this order, wherein presence of the transcription factor in a vertebrate cell can alter the differentiation state of the cell, the transcription factor further comprises an

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activation domain, and the DNA contacting residues of the first, second, and third domains are as shown in reference sequence SEQ ID NO: 2 as follows:

(i) glutamine at position -1 of the first zinc finger domain; serine at position 2 of the first zinc finger domain; asparagine at position 3 of the first zinc finger domain; and arginine at position 6 of the first zinc finger domain;

(ii) glutamine at position -1 of the second zinc finger domain; serine at position 2 of the second zinc finger domain; asparagine at position 3 of the second zinc finger domain; and lysine at position 6 of the second zinc finger domain; and

(iii) cysteine at position -1 of the third zinc finger domain; serine at position 2 of the third zinc finger domain; asparagine at position 3 of the third zinc finger domain; and arginine at position 6 of the third zinc finger domain.

22. (canceled)

23. (currently amended) The transcription factor of claim [[22]]2 wherein the zinc finger domains are domains from different naturally occurring human ~~proteins~~ protein sequences.

36. (currently amended) The transcription factor of claim 5 wherein

(i) the first zinc finger domain comprises SEQ ID NO: 177, or an amino acid sequence that differs by no more than three substitutions, wherein glutamine is at position -1, serine is at position 2, asparagine is at position 3, and arginine is at position 6 of the first zinc finger domain;

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(ii) the second zinc finger domain comprises SEQ ID NO: 162, or an amino acid sequence that differs by no more than three substitutions, wherein glutamine is at position -1, serine is at position 2, asparagine is at position 3, and lysine is at position 6 of the second zinc finger domain; and

(iii) the third zinc finger domain comprises SEQ ID NO: 173, or an amino acid sequence that differs by no more than three substitutions, wherein cysteine is at position -1, serine is at position 2, asparagine is at position 3, and arginine is at position 6 of the third zinc finger domain.

37. (currently amended) The transcription factor of claim 36 wherein

(i) the first zinc finger domain comprises SEQ ID NO: 177, or an amino acid sequence that differs by no more than two substitutions, wherein glutamine is at position -1, serine is at position 2, asparagine is at position 3, and arginine is at position 6 of the first zinc finger domain;

(ii) the second zinc finger domain comprises SEQ ID NO: 162, or an amino acid sequence that differs by no more than two substitutions, wherein glutamine is at position -1, serine is at position 2, asparagine is at position 3, and lysine is at position 6 of the second zinc finger domain; and

(iii) the third zinc finger domain comprises SEQ ID NO: 173, or an amino acid sequence that differs by no more than two substitutions, wherein cysteine is at position -1, serine is at position 2, asparagine is at position 3, and arginine is at position 6 of the third zinc finger domain.

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39. (currently amended) The transcription factor of claim 5 that comprises an amino acid sequence at least 90% identical to amino acids 31 to 109 of SEQ ID NO: 2, wherein the first, second, and third zinc finger domains comprise the following DNA contacting residues:

(i) glutamine at position -1 of the first zinc finger domain; serine at position 2 of the first zinc finger domain; asparagine at position 3 of the first zinc finger domain; and arginine at position 6 of the first zinc finger domain;

(ii) glutamine at position -1 of the second zinc finger domain; serine at position 2 of the second zinc finger domain; asparagine at position 3 of the second zinc finger domain; and lysine at position 6 of the second zinc finger domain; and

(iii) cysteine at position -1 of the third zinc finger domain; serine at position 2 of the third zinc finger domain; asparagine at position 3 of the third zinc finger domain; and arginine at position 6 of the third zinc finger domain.

40. (currently amended) The transcription factor of claim 5 that comprises an amino acid sequence at least 95% identical to amino acids 31 to 109 of SEQ ID NO: 2, wherein the first, second, and third zinc finger domains comprise the following DNA contacting residues:

(i) glutamine at position -1 of the first zinc finger domain; serine at position 2 of the first zinc finger domain; asparagine at position 3 of the first zinc finger domain; and arginine at position 6 of the first zinc finger domain;

(ii) glutamine at position -1 of the second zinc finger domain; serine at position 2 of the second zinc finger domain; asparagine at position 3 of the second zinc finger domain; and lysine at position 6 of the second zinc finger domain; and

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(iii) cysteine at position -1 of the third zinc finger domain; serine at position 2 of the third zinc finger domain; asparagine at position 3 of the third zinc finger domain; and arginine at position 6 of the third zinc finger domain.

41. (currently amended) The transcription factor of claim 5 that comprises an amino acid sequence at least 97% identical to amino acids 31 to 109 of SEQ ID NO: 2, wherein the first, second, and third zinc finger domains comprise the following DNA contacting residues:

(i) glutamine at position -1 of the first zinc finger domain; serine at position 2 of the first zinc finger domain; asparagine at position 3 of the first zinc finger domain; and arginine at position 6 of the first zinc finger domain;

(ii) glutamine at position -1 of the second zinc finger domain; serine at position 2 of the second zinc finger domain; asparagine at position 3 of the second zinc finger domain; and lysine at position 6 of the second zinc finger domain; and

(iii) cysteine at position -1 of the third zinc finger domain; serine at position 2 of the third zinc finger domain; asparagine at position 3 of the third zinc finger domain; and arginine at position 6 of the third zinc finger domain.

Examiner's Comment

It is noted that the amendment of claim 5 to include the phrase “as shown in reference sequence SEQ ID NO: 2” does not limit the sequence of the claimed transcription factor to the sequence of SEQ ID NO: 2. This phrase clarifies the positions of the DNA contacting residues of the first, second and third zinc finger domains. One can look to the sequence of SEQ ID NO:

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2 as a reference for locating each of the claimed DNA contacting residues specified in parts (i)-(iii) of the claim.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer Dunston, Ph.D. whose telephone number is 571-272-2916. The examiner can normally be reached on M-F, 9 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Low can be reached on 571-272-0951. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jennifer Dunston, Ph.D.
Examiner
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/Celine X Qian /
Primary Examiner, Art Unit 1636

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